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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,583	04/15/2004	Joachim Schmidt	2133.034USU	8182

7590 02/22/2011

Charles N. J. Ruggiero, Esq.
Ohlandt, Greeley, Ruggiero & Perle, LLP
10th Floor
One Landmark Square
Stamford, CT 06901-2682

EXAMINER	
LAFORGIA, CHRISTIAN A	
ART UNIT	PAPER NUMBER
2439	

MAIL DATE	DELIVERY MODE
02/22/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/825,583	SCHMIDT, JOACHIM	
	Examiner	Art Unit	
	Christian LaForgia	2439	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20,23 and 28-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,23 and 28-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 January 2011 has been entered.

2. Claims 1-20, 23, and 28-31 have been presented for examination

3. Claims 21, 22, and 24-27 have been cancelled as per Applicant's amendment.

Response to Arguments

4. Applicant's arguments with respect to the prior art rejections filed 26 January 2011 have been fully considered but they are not persuasive.

5. The Applicant argues that the prior art does not teach "calculating . . . a single cyclic redundancy check code for the block of user specific data and the block of check data[.]" The Examiner cited paragraphs 0016 and 0017 of Katsavounidis as teaching this limitation. Paragraph 0017 specifically teaches providing forward error correction (FEC) on a plurality of frame packets. FEC is a technique used to provide redundancy for data that is transmitted over networks. See U.S.P.N. 7,228,488 col. 4, ln. 66-67. See generally RFC 3452: Forward Error Correction (FEC) Building Block; RFC 3453: FEC in Reliable Multicast. One such well-known and commonly practiced technique for providing redundancy is cyclic redundancy check coding. Furthermore, Katsavounidis discloses that the FEC is performed on the entire packet, which is known to include user specific data, such as a source address and payload data, and check data,

such as a checksum. Therefore, the prior art teaches "calculating . . . a single cyclic redundancy check code for the block of user specific data and the block of check data[,]" and the claim is rejected.

6. The Applicant also argues that the prior art does not teach "a second data packet consisting essentially of the single cyclic redundancy check code[.]" Again, the Examiner relied upon paragraphs 0016 and 0017 of Katsavounidis as teaching this limitation, specifically the language "transmitting the forward error correction bits in a separate packet . . . ." As discussed above, the disclosure of FEC provides that redundancy data is also transmitted in connection with the normal data. Additionally, a commonly applied technique for calculating redundancy data is cyclic redundancy check coding. The disclosure of transmitting the forward error correction bits in a separate packet meets the limitation "a second data packet consisting essentially of the single cyclic redundancy check code[.]" Therefore, claim 28 is rejected.

7. The Applicant's next argument is that the prior art does not teach that the redundant information is "based solely on all the security-relevant data of the first data-packet." The Applicant relies on the prior art's disclosure that FEC is only applied to important data. The Examiner has reviewed the cited portion of the prior art reference and makes note that important data, as defined by Katsavounidis, includes motion vectors, DC coefficients, and header information. In other words, it appears that FEC is applied to data appearing in the payload of a packet (e.g. motion vectors and DC coefficients). This is the same part of the packet that the Applicant's claimed security-relevant data would reside. As noted below, the Examiner concedes that Katsavounidis does not teach security relevant data, but has provided Grass in support of those limitations. However, the combination of Katsavounidis' disclosure that payload data,

where the security-relevant data will become part of the packet, is subject to FEC and Grass' disclosure of secure data being communicated meets the limitation that the redundant information is "based solely on all the security-relevant data of the first data-packet," and the rejection is maintained.

8. See further rejections set forth below.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "essentially" in claim 28 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. M.P.E.P. § 2173.05(b).

Claim Rejections - 35 USC § 103

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claims 1-20 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0053454 A1 to Katsavounidis et al., hereinafter Katsavounidis, in view of U.S. Patent No. 7,228, 488 B1 to Grass et al., hereinafter Grass.

13. As per claim 1, Katsavounidis teaches a process for the packet-oriented transmission of data under application of at least one message consisting of a first data packet and an allocated

second data packet at least one transmission system with a parallel and/or serial network and/or bus system with at least one user connected to it, the process, comprising:

transmitting the data (paragraphs 0017, 0035, i.e. transmission of video information comprising user data identifier codes) and redundant information based on all the data within the at least one message (paragraphs 0016-0017, Figure 3 of Applicant's specification shows that a message is any type of message containing at two related packets. Katsavounidis discloses sending a first packet and a second packet that are related in that the second packet contains FEC bits related to the first data packet. One of ordinary skill in the art would recognize that forward error correction is a technique of error control for data transmission, whereby the sender adds redundant data to its messages);

wherein, for each message, the data is transmitted in the first data packet and the redundant information, based solely on all the data of the first data packet, is transmitted in the allocated second data packet of the at least one message (paragraphs 0016, 0017, 0018, i.e. transmitting the forward error correction bits in a separate packet).

14. Katsavounidis does not teach wherein the message is a security-oriented message that contains security-relevant data.

15. Grass teaches transmitting redundant data in separate packets related to secure communication of information, such as fax or data (column 4, line 66-67, column 5, lines 13-20, column 5, lines 43-46).

16. It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform forward error correction on secure communications, since Grass states at

column 5, lines 16-20 that this approach greatly reduces the amount of error data that needs to be transmitted without substantially increasing latency.

17. Regarding claim 2, Katsavounidis teaches that the redundant information is encoded (Figure 1B [block 106B], paragraphs 0037, 0040).

18. Regarding claim 3, Katsavounidis teaches that the redundant information is a check sum (CRC) calculated over the data (paragraphs 0016-0017, i.e. using forward error correction; one of ordinary skill in the art would recognize that forward error correction includes the use of a checksum).

19. Regarding claim 4, Katsavounidis teaches that the security-relevant data is selected from the group consisting of user data (paragraph 0017, user data identifier codes), check data, and control.

20. Regarding claim 5, Katsavounidis teaches transmitting several packets within a predefined (superset) frame structure (Abstract, paragraph 0017-19, i.e. plurality of frame packets).

21. With regards to claim 6, Katsavounidis teaches wherein the packets within a predefined (superset) frame structure include the security-relevant data and the redundant information that are allocated to each other (paragraph 0017-19).

22. Concerning claim 7, Katsavounidis teaches wherein the packets with the security-relevant data and the redundant information that are allocated to each other are transmitted in a parallel or serial way (Figure 1A [element 120], paragraph 0037, i.e. communication networks can communicate both in parallel and serially).

23. Concerning claim 8, Katsavounidis teaches wherein the packets with the security-relevant data and the redundant information that are allocated to each other are transmitted in strings or separately (paragraphs 0017, 0018, i.e. transmitting the forward error correction bits in a separate packet).

24. Regarding claim 9, Katsavounidis teaches wherein the packets include an addressing block and/or an identification code for their logical allocation (paragraph 0016, i.e. packet header information includes address information).

25. As per claims 10, Katsavounidis teaches a device for a transmission system with at least one parallel and/or serial network and/or bus system, for the packet-oriented transmission of security-relevant data under application of at least one security-oriented message consisting of a first data packet and an allocated second data packet the device comprising:

means, arranged on the side of the sender, for the packet-oriented embedding of the security-relevant data into the first data packet (paragraphs 0017, 0035, i.e. transmission of video information comprising user data identifier codes) and for the packet-oriented embedding of each allocated redundant information, based solely on all the security relevant data of the first data

packet, into the allocated second data packet of the security-oriented message (paragraphs 0017, 0018, i.e. transmitting the forward error correction bits in a separate packet).

26. Regarding claim 11, Katsavounidis teaches an encoding device for the encoding of the redundant information (Figure 1B [block 106B], paragraphs 0037, 0040).

27. Regarding claim 12, Katsavounidis teaches wherein the means for embedding are allocated means for the generation of the redundant information with the same number of bits (n) as the security-relevant data to be transmitted (paragraphs 0016-0017, i.e. using forward error correction).

28. Regarding claim 13, Katsavounidis teaches wherein the means for the generation and/or embedding are designed such that any possible combination of the security-oriented data of a packet unambiguously results in exactly one of the possible combinations within the packet having the respective allocated redundant information (paragraphs 0017, 0018, i.e. forward error correction).

29. Regarding claim 14, Katsavounidis teaches means arranged on the side of the receiver for the verification of an error-free data transmission based solely on all the security-relevant data embedded in at least one packet and the allocated redundant information, wherein each redundant information based solely on all the security relevant data of a respective on packet is

embedded in a separate packet (paragraphs 0020, 0021, 0037, 0038, i.e. decoding the received data).

30. With regards to claim 15, Katsavounidis teaches wherein the means for the verification are allocated means for reading out and allocating data and allocated redundant information received in different packets (paragraphs 0020, 0021, 0037, 0038).

31. Regarding claim 16, Katsavounidis teaches wherein several packets with the security-relevant data and/or the allocated redundant information are capable of being transmitted within a predefined (superset) frame structure (Abstract, paragraph 0017-19, i.e. plurality of frame packets).

32. Regarding claim 17, Katsavounidis teaches means for the packet-oriented embedding and readout of addressing blocks and/or identification codes for the logical allocation of individual packets and/or their contents to each other (paragraph 0016, i.e. packet header information includes address information).

33. Regarding claim 18, Katsavounidis teaches means are allocated to slave devices and/or a master device (paragraph 0038).

34. As per claim 19, Katsavounidis teaches a transmission system comprising:

at least one parallel and/or serial network and/or bus system (Figure 1A [element 120], paragraph 0037); and

at least one device according to claim 10 (see rejection of claim 10 above).

35. Regarding claim 20, Katsavounidis teaches wherein the network and/or bus system is at least one ring-, line-, star- and/or tree-shaped network and/or bus structure (Figure 1A [element 120], paragraph 0037).

36. As per claim 28, Katsavounidis teaches a process for the transmission of a message, comprising:

generating, at a sending side, a first data packet consisting essentially of a block of user specific data and a block of check data, the first data packet having a first number of bits (paragraphs 0017, 0035, i.e. transmission of video information comprising user data identifier codes and a CRC (as packets are known to have), each packet set for the MTU, thereby having a certain number of bits);

calculating, at the sending side via a processor, a single cyclic redundancy check code for the block of user specific data and the block of check data (paragraphs 0016-0017, calculating FEC (forward error correction), which is a technique of error control for data transmission, whereby the sender adds redundant data to its messages, such as CRC check codes. This is further supported by column 4, lines 66-67 and column 5, lines 13-20 of Grass.);

generating, at the sending side, a second data packet consisting essentially of the single cyclic redundancy check code (paragraphs 0016-0017, sending a first packet and a second packet

that are related in that the second packet contains FEC bits related to the first data packet. One of ordinary skill in the art would recognize that forward error correction is a technique of error control for data transmission, whereby the sender adds redundant data to its messages); and

transmitting, over an unsecured bus or network, the first and second data packets (paragraphs 0016-0017, sending a first packet and a second packet that are related in that the second packet contains FEC bits related to the first data packet).

37. Katsavounidis does not teach wherein the message is a security-oriented message that contains security-relevant data.

38. Grass teaches transmitting redundant data in separate packets related to secure communication of information, such as fax or data (column 4, line 66-67, column 5, lines 13-20, column 5, lines 43-46).

39. It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform forward error correction on secure communications, since Grass states at column 5, lines 16-20 that this approach greatly reduces the amount of error data that needs to be transmitted without substantially increasing latency.

40. Regarding claim 29, Katsavounidis and Grass do not teach combining and jointly transmitting the first and second data packets within a frame structure.

41. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the first and second data packets within a frame structure to be transmitted jointly, since Grass discloses techniques for transmitting the data in protocols other than packets, such as Frame Relay or ATM (column 5, lines 45-46). Combining the packets to be transmitted

jointly would greatly reduce the amount of error data transmitted while substantially decreasing latency and network traffic.

42. Regarding claim 30, both Katsavounidis and Grass teach transmitting the first and second data packets different frame structures (Katsavounidis: paragraphs 0016-0017, Grass: column 5, lines 13-17, column 5, lines 45-46).

43. Regarding claim 31, Grass teaches wherein transmitting the first and second data packets comprise separately transmitting the first and second data packets (column 5, lines 13-17).

44. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katsavounidis in view of Grass as applied above, and in further view of U.S. Patent No. 2003/0200323 A1 to Dold et al., hereinafter Dold.

45. Regarding claim 23, Katsavounidis does not teach wherein the at least one parallel and/or serial network and/or bus system comprises an Interbus system.

46. Dold teaches that Interbus is interchangeable with bus protocols such as CAN, Profibus, Ethernet, ASI, DeviceNet or CANopen (paragraph 0013, claim 2).

47. It would have been obvious to one of ordinary skill in the art at the time the invention was made to interchange Interbus with one of the communication protocols discussed in Katsavounidis, since one of ordinary skill in the art would recognize that switching out the communication protocol would yield predictable results, especially since the prior art shows that

they are interchangeable. See KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1395 (2007).

Conclusion

48. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

49. The following patents are cited to further show the state of the art with respect to forward error correction, such as:

United States Patent No. 6,078,785 to Bush, which is cited to show FEC used in electricity consumption reporting.

United States Patent No. 6,983,414 B1 to Duschatko et al., which is cited to show FEC used with an ASIC.

United States Patent Application Publication No. 2004/0098652 A1 to Sternberg et al., which is cited to show FEC in a wireless communication system.

United States Patent Application Publication No. 2005/0008103 A1 to Sternberg et al., which is cited to show FEC in a wireless communication system.

50. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian LaForgia whose telephone number is (571)272-3792. The examiner can normally be reached on Monday thru Thursday 7-5.

51. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

52. Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christian LaForgia/
Primary Examiner, Art Unit 2439

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